A Phase I Archeological Survey of a Proposed Wetlands Replacement Tract on the Yano Range, Fort Knox Military Reservation, Hardin County, Kentucky

by
Pamela A. Schenian
Staff Archeologist

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Pamela A. Schenian
Staff Archeologist
and Project Principal Investigator

Directorate of Public Works, Fort Knox, Kentucky 40121-5000

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16. Abstract (Limit: 200 words)

In May 1994, the Fort Knox Staff Archeologist and Assistant Staff Archeologist conducted a Phase I archeological survey of a proposed wetlands replacement project area on the Yano Range, Fort Knox Military Reservation, Hardin County, Kentucky. The project area encompasses approximately 24.3 ha (60.0 acres). The survey resulted in the discovery of no archeological materials or deposits. It is recommended that the wetlands replacement tract be developed as proposed.

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ABSTRACT

In May 1994, the Fort Knox Staff Archeologist and Assistant Staff Archeologist conducted a Phase I archeological survey of a proposed wetlands replacement project area on the Yano Range, Fort Knox Military Reservation, Hardin County, Kentucky. The project area encompasses approximately 24.3 ha (60.0 acres). The survey resulted in the discovery of no archeological materials or deposits. It is recommended that the wetlands replacement tract be developed as proposed.

MANAGEMENT SUMMARY

In accordance with Executive Order 11593 and other applicable federal laws and regulations, a Phase I archeological study was conducted of a proposed wetlands replacement tract near the southeast boundary of the Yano Range on the Fort Knox Military Reservation, Hardin County, Kentucky. No evidence was found in the project area of archeological materials or potential cultural deposits. It is recommended that the project area be used as proposed.

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I. INTRODUCTION

In May 1994, the Fort Knox Staff Archeologist and Assistant Staff Archeologist conducted a Phase I archeological survey of a proposed wetlands replacement tract on the Yano Range, Fort Knox Military Reservation, Hardin County, Kentucky (Figures 1 and 2). The survey area comprises a roughly triangular plot of land, approximately 60.0 acres (24.3 ha) in size.

The Yano Range has been in use for several decades. Portions of the range were cleared of duds and modified in the improvement of the range in 1992. The range was not surveyed for cultural resources prior to the range improvements construction due to the high potential for unexploded ordnance. The current project area, near the southern boundary of the reservation, lies behind the firing line and was not effected by the 1992 construction.

It has been proposed that wetlands be created in the project tract to replace wetlands eradicated during the 1992 Yano Range improvements. The project area contains two stands of cedars, separated by an oak forest. The oak forest is swampy, while the cedar stands are in areas which were historically bedfurrowed to increase the drainage and suitability for cultivated crops. It is proposed to clear the cedars and then level the bedfurrows, primarily by plowing. A shallow canal might be excavated to join the two cedar stands, although this has not been confirmed in the design plans.

The proposed wetlands replacement tract is located in the Plain section of the Pennyrile cultural landscape. The project area is located between the Mississippian Plateau physiographic region and the Knobs physiographic region. Soils in the project area are classified as McGary-Markland-Nolin soil association (Arms et al. 1979: General Soil Map). The project area is on the Rolling Fork floodplain, at an elevation of approximately 440 feet. The nearest segment of the Rolling Fork lies 1.0 km northeast, but four intermittent drainages adjoin the project area.

The survey was required to comply with the National Environmental Protection Act, or NEPA, (Public Law 91-190), the National Historic Preservation Act, as amended (Public Law 89-665), the Archaeological Resources Protection Act of 1979 (Public Law 96-95), Presidential Executive Order 11593, and Army Regulation 420-40.

During 1993, the Fort Knox Staff Archeologist obtained all the documents necessary to perform Phase I literature searches for the installation (e.g., site forms, reports of previous investigations, historic maps), which are on file at the Cultural Resource Management (CRM) Branch, Director-

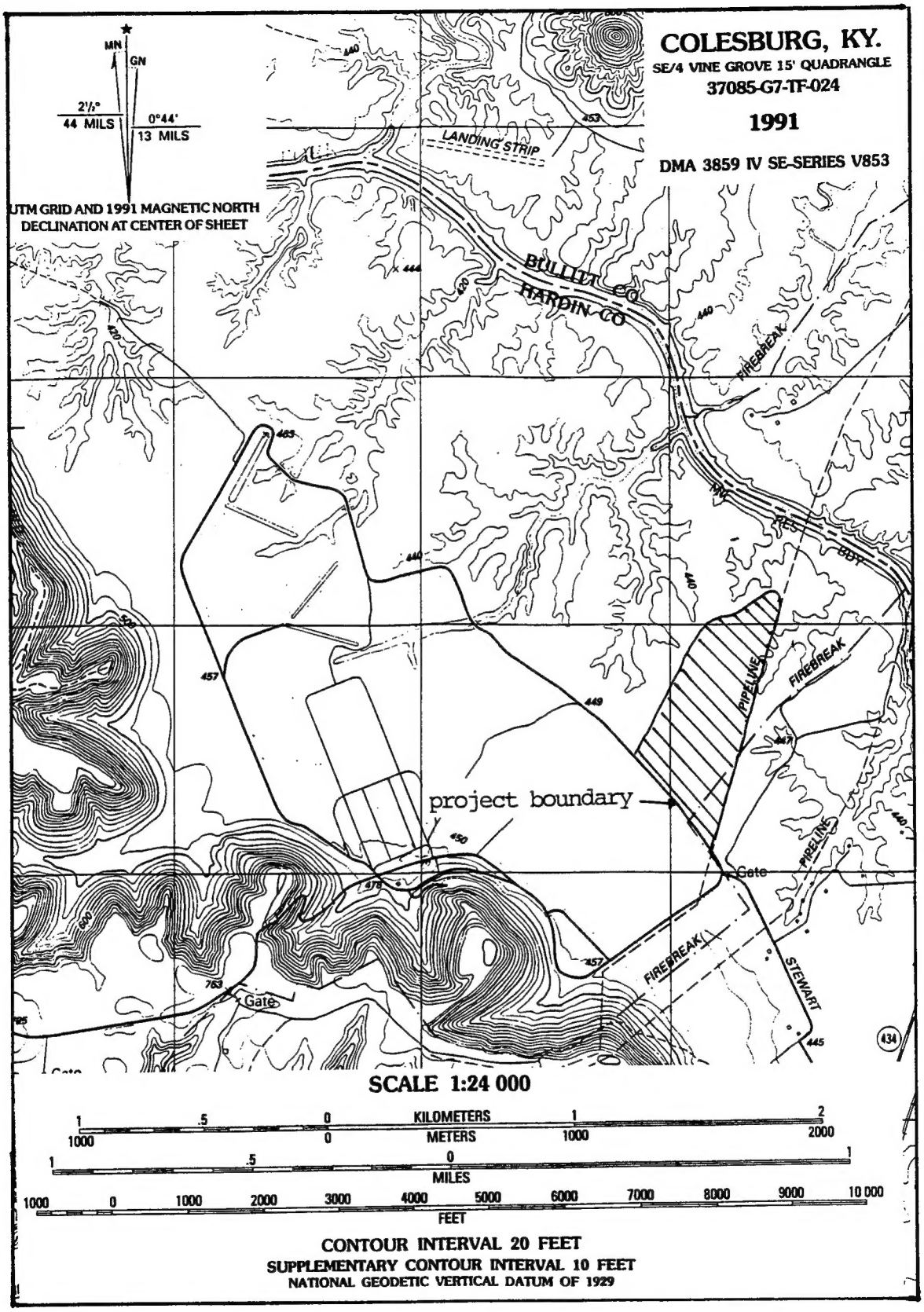

Figure 1. Location of Project Area.

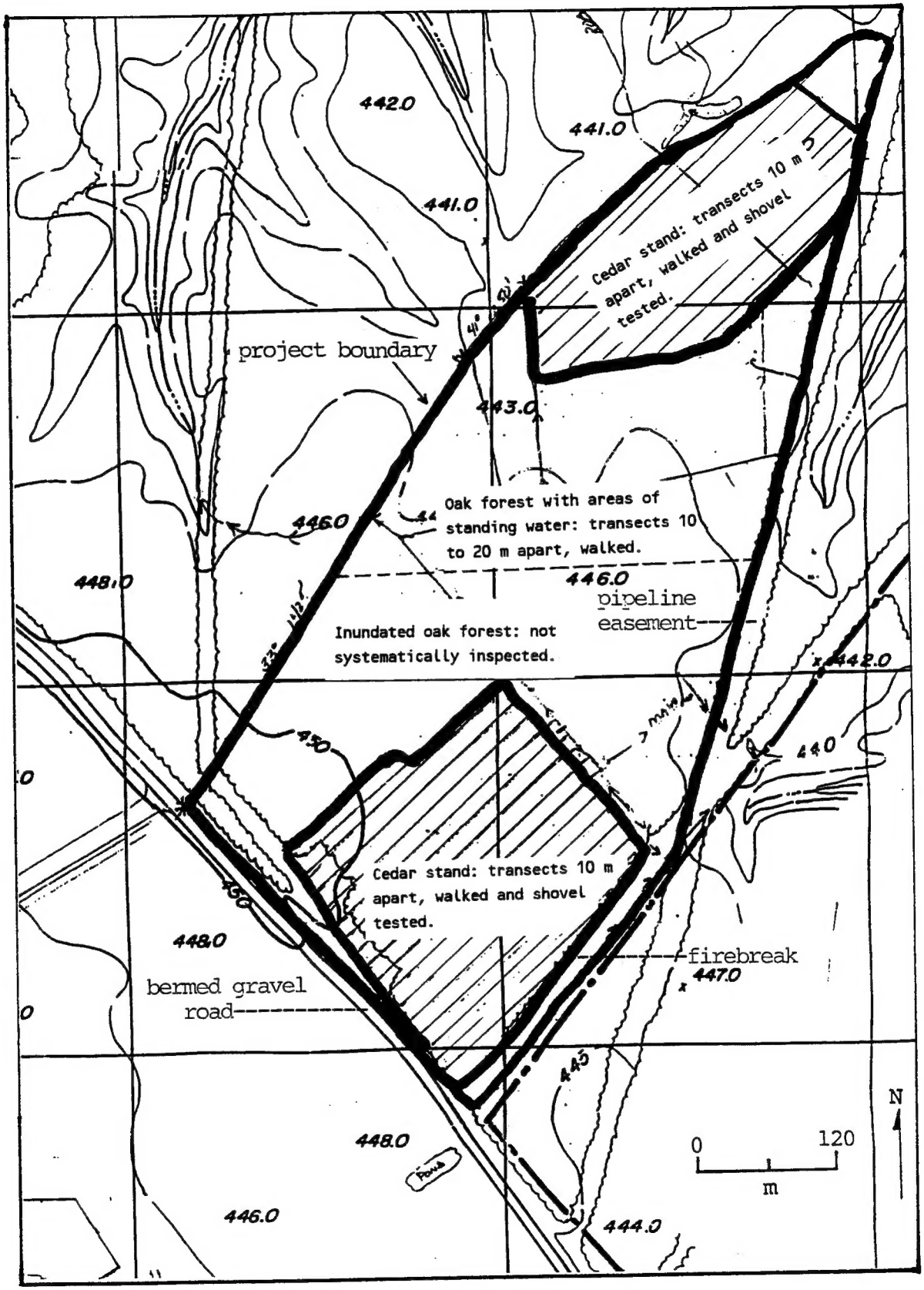

FIGURE 2. Plan View of the Project Area.

ate of Public Works, Fort Knox. No file check was made with the Office of State Archaeology and the Kentucky Heritage Council specifically for this project.

The project area was surveyed on May 5, 1994. A total of 6.0 person hours were spent in the survey of the project area. A portion of the project area, in the swampy oak forest, could not be surveyed due to excessive standing water. No artifacts were observed or collected in this survey. Documentation of this project will be curated at the University of Louisville Program of Archaeology, on a "permanent loan" basis, under contract number DABT 23-93-C-0093, for curatorial and technical support (copy of contract on file, DPW, Fort Knox, Kentucky). Duplicate copies of documents are on file at DPW.

II. PREVIOUS RESEARCH

There are 112 Hunting Areas (HA) on the Fort Knox installation, plus an approximately 10,000 acre cantonment and a small amount of acreage which lies outside the cantonment and any hunting area. O'Malley et al. (1980) surveyed approximately one-quarter of each of the 96 hunting areas which did not contain grenade ranges. O'Malley et al. (1980) recorded 415 sites (15Bu295-15Bu410, 15Hd109-15Hd294, and 15Md103-15Md242). Some of these sites were recorded outside the official survey areas, and were discovered while gaining access to the selected survey areas from the closest access road. Some of the sites are isolated finds. O'Malley et al. (1980) did not evaluate the National Register status of the sites inspected in a manner which meets the current standards, although opinions are offered on many of the site forms and in an appendix of the report of investigations. The purpose of the O'Malley et al. (1980) study was to provide a preliminary inventory of portions of the installation and to develop a database for the predictive modeling of site locations on the installation, and not to evaluate sites for a task-specific construction project.

Holmberg (1991) prepared an archival study on the four mill sites (15Md164, 15Md176, 15Md185, and Grahamton) recorded by O'Malley et al. (1980) in the Meade County section of the base. Holmberg's (1991) study includes an appendix (Ball 1991a) delimiting a scope of services for the testing of the mill sites. This testing will be performed in 1994 and 1995 through a Legacy grant.

Several projects have been conducted in conjunction with proposed timber harvests. Bush et al. (1988) revisited 15Bu319 and recorded sites 15Hd438-15Hd446 and 15Bu485-15Bu491 in HAs 41, 42, and 52. Myers (1990) surveyed 287 acres in HA 95, recording 15Bu495-15Bu502, and describing modern house and garbage dump sites. Mueller

(1991) surveyed 270 acres in HA 1, revisiting 15Md11, 15Md152, and 15Md159, and recording 15Md322-15Md325, two historic cemeteries, five prehistoric isolated finds, and three modern structures. Schenian and Mocas (1992) surveyed 600 acres and attempted to relocate and flag previously recorded sites in an additional 300 acres. Their project areas consisted of 14 timber parcels located in HAs 13, 74, 76-78, 81-84, and 88-90. This survey resulted in the recording of sites 15Hd462-15Hd464, 15Md326, and one isolated find, and the revisiting of 15Hd140. Unsuccessful attempts were made to relocate 15Hd18, 15Hd113, and 15Hd139. Ruple (1992a) revisited sites 15Md152, 15Md153, and 15Md322 in HA 1. Ruple (1992b) revisited sites 15Hd184, 15Hd186, and 15Hd249, and made an unsuccessful attempt to relocate 15Hd248, in order to flag avoidance boundaries around the sites in HA 90 in preparation for logging activities in conjunction with the clearing of the Highway 313 easement. Ruple (1993a) surveyed all 813 acres comprising HA 4 in preparation for timber harvests in scattered parcels within the hunting area.

The improvement of facilities on the Fort Knox installation has resulted in several CRM studies. Sorensen and Ison (1979) surveyed a proposed telephone building expansion site and access road in the cantonment, recording no sites. Sussenbach (1990) surveyed three weather radar installation sites in HA 23, discovering one prehistoric isolated find. Ruple (1993b) surveyed 10 acres in the cantonment for a shoreline maintenance project, encountering no sites. Mocas (1993) surveyed 165 acres for a proposed landfill, which located no sites in the highly disturbed area. Mocas (1994a) surveyed a proposed sports complex tract in the cantonment, encountering no sites. Schenian and Mocas (1994) recorded 15Hd488 in the survey of a borrow pit proposed for use in the improvement of the Cedar Creek airstrip.

The development, expansion, or improvement of training areas has resulted in a number of CRM studies. Driskell and O'Malley (1979) surveyed the Wilcox Gunnery Range, recording sites 15Bu393-15Bu397. Schenian (1991) surveyed 116 acres in portions of HAs 17, 30, and 41, in conjunction with the Fort Dix realignment, re-examining 15Bu303, and recording 15Bu492, 15Hd459, and two prehistoric isolated finds. Hemberger (1991) also surveyed approximately 405 acres in seven construction sites in HAs 17, 24, 31, 32, 34, and 54, in conjunction with the Fort Dix realignment. This study resulted in the recording of 15Hd461 and 15Bu504, the revisiting of 15Bu299 and 15Bu385, and the unsuccessful attempt to relocate previously recorded site 15Hd274. Hemberger (1991) surveyed a total of 126 acres in four proposed construction areas in the Yano Tank Range, in HA 93, recording 15Hd460, revisiting 15Hd178, 15Hd182, and 15Hd282, and unsuccessfully attempting to relocate previously recorded site 15Hd283. Hemberger (1992) surveyed a 7.5 acre borrow area in HA 24, proposed to be used for the consolidation and

improvement of two training ranges, and encountered no sites. Schenian and Mocas (1993) recorded 15Hd482-15Hd487, 15Md336-15Md342, and four isolated finds, plus revisited 15Md143, 15Md154, 15Md163, and 15Md175. Schenian (1994) and Mocas (1994c) surveyed borrow pits for berm repair on the Yano Range, recording no sites in the former study and sites 15Bu524-15Bu527 in the latter.

In conjunction with land sales, Ball (1987) surveyed approximately 196 acres in the Bullitt County portion of Fort Knox, recording sites 15Bu479-15Bu481 and describing one modern house foundation. Ball (1991b) also surveyed a 19 acre tract near Radcliff prior to disposal of the tract, recording two historic/modern trash dumps which were not assigned state site numbers. Hale (1981) surveyed the Otter Creek Park, recording 15Md243-15Md303. Portions of Otter Creek Park, now owned by the City of Louisville, were once part of the Fort Knox military installation, but were disposed of in the 1970's.

Road construction and improvements have resulted in a number of CRM projects on the installation. McGraw (1976) surveyed the proposed U.S. 60 bridge and approaches near Otter Creek Park, encountering no sites in a 2.35 mile long corridor which passes through HAs 7-9 and 11 and 12. Fiegal (1982) surveyed the Radcliff Industrial Park access road, including land in HA 15 as well as off the installation. He recorded 15Hd403 and 15Hd404 off the installation, and revisited 15Hd215 and 15Hd272 on the installation. Webb and Brockington (1986) surveyed the 4.75 mile long Kentucky Highway 1638 realignment corridor, which included portions of HAs 5 and 7-10. They revisited sites 15Md176, and 15Md182-15Md185, and recorded 15Md306, 15Md307, and 15Md309. Sites 15Md176, 15Md182, 15Md183, and 15Md307 are components of the former town of Garnettsville. The latter three sites were tested (Wheaton 1982), but 15Md176 was not tested because it fell outside the 1638 realignment easement. DiBlasi (1986) surveyed 14 alternative alignments of the approximately 20 km (12.4 miles) long Kentucky Highway 313 corridor, which includes portions of HAs 80-83 and 90, as well as land off the installation. A total of 27 sites (15Hd406-15Hd430 off the installation, and 15Hd135, 15Hd184, 15Hd186, 15Hd248, 15Hd249, 15Hd253, 15Hd431, and 15Hd432 on the installation), some previously recorded, were located in the survey corridor. Hixon (1992) tested 15Hd423 and 15Hd426, and archeologists from Wilbur Smith Associates tested 15Hd249 and 15Hd253 (Fenton 1993: personal communication to Schenian). A survey of proposed borrow pits for the Cedar Creek-Yano Road improvements (Mocas 1994b) resulted in the recording of 15Hd489 and 15Hd490, the revisiting of 15Hd120 and 15Hd121, and the unsuccessful attempt to relocate 15Hd246.

In addition to CRM projects, several sites have been recorded on the installation in non-CRM contexts. Funk-

houser and Webb (1932) published a catalog of archeological sites in Kentucky, with the information gained primarily through correspondence with amateur archeologists, collectors, and local historians, and included the description of two sites now on the installation. These are 15Md10 and 15Md11, both mounds or mound groups (Funkhouser and Webb 1932:281). Jerry Hoehler collected materials (now at the University of Louisville Program of Archaeology) from 15Bu251, 15Bu292, and 15Bu293, probably in the 1950's. A soldier's wife, Sally Wright, partially excavated 15Hd273, a mound in HA 6, in 1955 (Anonymous 1955). Lee Hanson recorded 15Hd17 and 15Hd18 while attending ROTC training camp in 1961 (Hanson 1961a, 1961b; Dr. R. Berle Clay 1991: personal communication).

Of greatest relevance to the current survey are the surveys of other portions of Yano Range -- O'Malley et al. (1980), Hemberger (1991), Schenian (1994), and Mocas (1994c) -- and the DiBlasi survey of the Highway 313 corridor. With the exception of the Schenian (1994) survey, all of the projects recorded sites on or near the Yano Range. The Yano Range covers a large area, however, and the nearest recorded site is more than 1.5 km from the current project area.

III. SURVEY PREDICTIONS

Based on previous archeological research in the area, the history of settlement, and the environmental setting of the project area, the following alternative expectations were postulated:

1) The Yano Range has been in use for approximately 40 years, and was subject to extensive disturbance during dud clearing and construction of the original range and of the range improvements in 1992. It was expected that portions of the project area might be heavily disturbed and little or no intact cultural material would be present.

2) The 1940's Fort Knox land acquisition maps depict the locations of former property boundaries, but not of former structures. Where former residence locations are known for the installation, residences on or near the major floodplains were usually located in the hollows at the base of the ridges and bluffs and not on the more flood prone areas. The project area has a low potential for historic residences.

3) The project area encompasses portions of two pre-acquisition properties. One of these was a long, linear property which extended to the bluffs at the west side of the Yano Range, which is a more

likely place for a residence. At most, one historic farmstead is expected in the project area, but evidence of outbuildings or dumps associated with two farmsteads might exist.

4) Surface alteration has been extensive in some portions of the Yano Range due to historic agricultural practices (e.g., bedfurrowing and diversion terrace construction) and due to the construction and use of the Yano Range. Bedfurrowing scars are evident in the aerial photographs of the project area, suggesting that historic agricultural practices, rather than range construction and use, would be the greatest source of disturbance of potential prehistoric and early historic sites, if any existed.

5) The soil in the project area is McGary silt loam (Arms et al. 1979: Sheets 9 and 14). This soil type is seasonally prone to flooding and has a high water table. It is poorly suited for residential uses and is better suited to woods and pasture than cultivated crops (Arms et al. 1979: 31). The project area is therefore unlikely to have been used for long-term habitation either prehistorically or historically, although short-term camps or other special activity sites are possible.

IV. SETTING AND FIELD METHODS

The proposed wetlands replacement tract is located in the Mississippian Plateau physiographic region of Kentucky (McGrain and Currens 1978:35) on the broad floodplain of the Rolling Fork River. Drainage in the project area is into tributaries of the Rolling Fork, which lies 1.0 km northeast of the project site. The elevation of the project area is approximately 440 feet, with little variation throughout the project area. The soils in the project area are classified as McGary-Markland-Nolin soil association (Arms et al. 1979: General Soil Map) and the soil series and type are McGary silt loam (Arms et al. 1979: Sheets 9 and 14).

The project area is roughly triangular in shape. It is bordered to the southwest by a bermed gravel road and to the southeast by a firebreak and underground pipeline easement. The north boundary was flagged prior to the arrival of the archeologists.

The survey of the project area was initiated with the inspection of the firebreak and underground pipeline easement which forms the southeast boundary. This boundary, which is bushhogged on a regular basis, was walked in two

transects spaced 10 m apart. This area had variable ground surface cover (10 to 75 percent), and many small areas of standing water. One or more shovel tests were excavated on the few small rises crossed by the firebreak/pipeline easement. Each shovel test was approximately 30 cm square and excavated to subsoil. The fill was trowel-sorted prior to backfilling of each test.

At the northeast corner of the project area, in and near the area proposed for the creation of a wetlands area, the area was in cedars with grasses, briars, and vines forming the undergrowth. This area had been bedfurrowed historically, although it appeared that some of the bedfurrowing had been smoothed over, and the surface had a lumpy appearance. Ground surface visibility was variable (zero to 100 percent), but averaged 50 percent. There were numerous open patches, especially at the bases of trees, around animal burrows, and on animal trails. Two dirt truck paths passed through the woods, and provided exposures of the ground surface.

At the southwest corner of the project area, in and near the area proposed for the creation of a wetlands area, the area was in cedars and deciduous trees with grasses, briars, and vines forming the undergrowth. The bedfurrowing was prominent in this area, with the beds raised over 0.5 m above the furrows in places. Ground surface visibility was approximately 50 percent, but approached 100 percent along the margin of the beds and on the slopes of the furrows.

In both cedar stands, the ground surface was walked in east-west transects at 10 m intervals. If the ground surface was not visible for 20 m within a transect, then a shovel test pit was excavated. Each shovel test pit was approximately 30 cm in diameter and excavated to subsoil or, more frequently, the water table, was encountered. The fill was trowel-sorted prior to backfilling of the test.

Between the two cedar stands is a deciduous forest, primarily large oaks with an undergrowth consisting predominantly of a hellish panorama of poison ivy. Large areas of standing water were present, and the water table was high. This area may have been bedfurrowed historically, but the bedfurrowing was not readily apparent. Starting at the east end of this area, adjacent to the east cedar stand, the inspection of these woods was initiated by slogging transects 10 m apart for six transects. Because the standing water and quagmire conditions increased as one went westward, the transect interval was increased to 20 m intervals for four transects. Surface visibility was generally 10 percent or less, due to leaf cover and standing murky water. Distance visibility was generally good, however, allowing the archeologists to scan the entire transect for historic ruins, prehistoric mounds, or other above-ground cultural features (none observed). Shovel testing was not feasible

due to the high water table, which was present on or within 5 cm of the surface. To increase effective visibility, crayfish tunnels, exposures at the driplines of trees, and animal paths were carefully inspected when available. At this point, it was determined that the remaining woods were thoroughly inundated and the survey was ended.

Deeply alluviated areas, such as the current project area, are typically deep tested at the Phase I level to attempt to locate and identify potentially buried archeological sites. Deep testing was not possible in this project area, however, due to the high water table -- backhoe trenches would fill with water or collapse too rapidly to inspect.

V. CONCLUSIONS AND RECOMMENDATIONS

The Phase I archeological survey of the proposed wetlands replacement tract resulted in the discovery of no archeological materials or deposits. A small amount of historic/modern material was observed in the firebreak near the gravel road that forms the west boundary of the tract. These were determined to derive from a large illegal dump located approximately 400 m south of the firebreak and just off the installation. Materials from the dump were smeared outward from the dump during the construction of the road berm and ditches, and have been further disseminated along the firebreak by discing. These are secondary refuse deposits, however, and not of archeological importance. It is recommended that the installation be permitted to proceed with the wetlands creation as proposed.

This survey inspected the project area as best as possible given the wet conditions, and located no archeological sites. The soil characteristics and wet conditions make this project area an unlikely location for long-term human habitation. It is possible, however, that the area was drier prehistorically and that evidence of past occupation or use has been buried by alluvial deposits. If archeological materials are discovered during earthmoving activities in the project area all activity in the vicinity of the finds must cease and the State Historic Preservation Officer (502-564-6661) and the DPW Cultural Resource Management Branch (502-624-6581) must be contacted, so representatives of these agencies may evaluate the materials. If human remains, regardless of age or cultural affiliation, are discovered, all activity in the vicinity of the remains must cease immediately, and the state medical examiner (502-564-4545) and the appropriate local law enforcement agency (Fort Knox Law Enforcement Command, 502-624-6852) must be contacted, as stipulated in KRS 72.020.

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APPENDIX A.

RESUMES OF KEY PERSONNEL

Pamela A. Schenian
Staff Archeologist and Project Principal Investigator

Office Address: Directorate of Public Works
ATTN: ATZK-DPW (Schenian)
U.S. Army Armor Center and Fort Knox
Fort Knox, Kentucky 40121-5000
Phone: (502) 624-6581

Date and Place of Birth: January 1, 1959; Waukesha, WI.

Present Position: J.M. Waller & Associates/Fort Knox Staff Archeologist and Cultural Resource Manager

Education:
A.B.D. in Anthropology, Northwestern University, 1984.
M.A. in Anthropology, Northwestern University, 1982.
A.B. in Anthropology, Bryn Mawr College, 1980.

Previous Employment:
Senior Staff Archeologist, Archeology Service Center, Department of Sociology, Anthropology, and Social Work, Murray State University, Murray, KY, November 1991-June 1993; Staff Archeologist, November 1983-November 1991.
Southern Illinois University, Carbondale, IL: Field Technician, November-December 1985, September-October 1984.
Illinois State Museum Society, Springfield, IL: Field Assistant II (Supervisor), summer 1983; Field Technician, summer 1981.
Center for American Archeology, Kampsville, IL: Field Technician, summer 1982.
Department of Anthropology, Northwestern University, Evanston, IL: Teaching Assistant, 1981-82 academic year.
Great Lakes Archeological Research Center, Milwaukee, WI: Field Technician, summer 1979.

Field Research Experience:
Field experience on prehistoric and historic archeological projects in the states of Illinois, Indiana, Kentucky, New Jersey, South Dakota, Tennessee, and Wisconsin, 1979-present.

Professional Publications, Reports, Papers and Manuscripts:
86 CRM contract reports on projects in Indiana, Kentucky, and Tennessee.
1 Homocide site excavation contract report prepared in lieu of court testimony in Illinois.
7 Papers presented at professional conferences.
5 Publications, 1 in press.
Doctoral candidacy qualifying paper: "A Theory of Individual Style Variation for Archeological Studies".
Manuscript submitted in partial fulfillment of the M.A. requirements: "Models of Environmental-Cultural Relationships: Testing with Archeological Evidence".